

## CLAIMS

1. A network analyzer that is connected to a test set that comprises network analyzer side ports, device under test side ports that are connected to a device under test, and a port connecting means that selects any one of the device under test side ports, and connects the selected device under test side port to one of the network analyzer side ports, wherein the device under test side ports constitute a main port group and a sub port group whose connection to the network analyzer side ports is independently set, the network analyzer comprising:

transmission/reception ports that are connected to the network analyzer side ports one by one, and are used to transmit/receive a signal;

a transmission tracking error determining means that determines a transmission tracking error of a combination of one of the possible connections of the main port group and one of the possible connections of the sub port group for all the possible connections of the main port group based on a signal before transmitted by said transmission/reception port, and a reception signal; and

a transmission tracking error deriving means that derives a transmission tracking error other than the transmission tracking errors determined by said transmission tracking error determining means based on the transmission tracking error determined by said transmission tracking error determining means.

2. The network analyzer according to claim 1, wherein said transmission tracking error deriving means uses two connections other than connections at a start point and an endpoint of the transmission tracking error to be derived to derive the transmission tracking error for a

combination of one of the possible connections of the main port group and another possible connection of the sub port group.

3. The network analyzer according to claim 1 or 2, wherein:
  - the main port group includes three of the device under test side ports connected to two of the network analyzer side ports;
  - the sub port group includes three of the device under test side ports connected to one of the network analyzer side ports; and
  - two of the sub port groups exist.
4. The network analyzer according to claim 1 or 2 comprising:
  - a transmission signal measuring means that measures a transmission signal parameter relating to a transmission signal transmitted from said transmission/reception port before a measuring system error factor is generated; and
  - a reception signal measuring means that measures a reception signal parameter relating to a reception signal received by said transmission/reception port.
5. The network analyzer according to claim 4, wherein the reception signal includes a reflected signal which is a reflected transmission signal.
6. A transmission tracking error measuring method of measuring a transmission tracking error of a network analyzer that is connected to a test set that comprises network analyzer side ports, device under test side ports that are connected to a device under test, and a port connecting means that selects any one of the device under test side ports, and connects the selected device under test side port to one of the network analyzer side ports, wherein

the device under test side ports constitute a main port group and a sub port group whose connection to the network analyzer side ports is independently set, the network analyzer comprising transmission/reception ports that are connected to the network analyzer side ports one by one, and are used to transmit/receive a signal, the transmission tracking error measuring method comprising:

a connection realizing step of realizing a combination of one of the possible connections of the main port group and one of the possible connections of the sub port group for all the possible connections of the main port group;

a device under test side port coupling step of realizing all couplings for one combination of two ports for the device under test side ports connected to the network analyzer side ports if the combination is realized by said connection realizing step;

a signal measuring step of measuring a signal before transmitted by said transmission/reception port, and a received signal;

a transmission tracking error determining step of determining a transmission tracking error of the coupling realized by said device under test side port coupling step based on a measured result of said signal measuring step; and

a transmission tracking error deriving step of deriving a transmission tracking error other than the transmission tracking error determined by said transmission tracking error determining step based on the transmission tracking error determined by said transmission tracking error determining step.

7. The transmission tracking error measuring method according to claim 6, wherein said device under test side port coupling step is realized by

a four-port calibrator which can couple all combinations of two ports out of four ports.

8. A network analyzing method of analyzing the net work by using a network analyzer that is connected to a test set that comprises network analyzer side ports, device under test side ports that are connected to a device under test, and a port connecting means that selects any one of the device under test side ports, and connects the selected device under test side port to one of the network analyzer side ports, wherein the device under test side ports constitute a main port group and a sub port group whose connection to the network analyzer side ports is independently set, the network analyzer comprising: transmission/reception ports that are connected to the network analyzer side ports one by one, and are used to transmit/receive a signal; the network analyzing method comprising:

a transmission tracking error determining step that determines a transmission tracking error of a combination of one of the possible connections of the main port group and one of the possible connections of the sub port group for all the possible connections of the main port group based on a signal before transmitted by said transmission/reception port, and a reception signal; and

a transmission tracking error deriving step that derives a transmission tracking error other than the transmission tracking errors determined by said transmission tracking error determining step based on the transmission tracking error determined by said transmission tracking error determining step.

9. A program of instructions for execution by the computer to perform a processing for analyzing a network by using a network analyzer that is

connected to a test set that comprises network analyzer side ports, device under test side ports that are connected to a device under test, and a port connecting means that selects any one of the device under test side ports, and connects the selected device under test side port to one of the network analyzer side ports, wherein the device under test side ports constitute a main port group and a sub port group whose connection to the network analyzer side ports is independently set, the network analyzer comprising: transmission/reception ports that are connected to the network analyzer side ports one by one, and are used to transmit/receive a signal; said processing comprising:

a transmission tracking error determining step that determines a transmission tracking error of a combination of one of the possible connections of the main port group and one of the possible connections of the sub port group for all the possible connections of the main port group based on a signal before transmitted by said transmission/reception port, and a reception signal; and

a transmission tracking error deriving step that derives a transmission tracking error other than the transmission tracking errors determined by said transmission tracking error determining step based on the transmission tracking error determined by said transmission tracking error determining step.

10. A computer-readable medium having a program of instructions for execution by the computer to perform a processing for analyzing a network by using a network analyzer that is connected to a test set that comprises network analyzer side ports, device under test side ports that are connected to a device under test, and a port connecting means that selects any one of the device under test side ports, and connects the selected device under test

side port to one of the network analyzer side ports, wherein the device under test side ports constitute a main port group and a sub port group whose connection to the network analyzer side ports is independently set, the network analyzer comprising: transmission/reception ports that are connected to the network analyzer side ports one by one, and are used to transmit/receive a signal; said processing comprising:

a transmission tracking error determining step that determines a transmission tracking error of a combination of one of the possible connections of the main port group and one of the possible connections of the sub port group for all the possible connections of the main port group based on a signal before transmitted by said transmission/reception port, and a reception signal; and

a transmission tracking error deriving step that derives a transmission tracking error other than the transmission tracking errors determined by said transmission tracking error determining step based on the transmission tracking error determined by said transmission tracking error determining step.